

# SoundTech<sup>TM</sup>

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P R O F E S S I O N A L   A U D I O

## **Service Manual: MM10SD Stereo Powered Mixer**

### **Table of Contents:**

Specifications .....	2
Block Diagram .....	3
Exploded View and Assembly Parts .....	4~5
Schematic Diagram .....	6~8
Printed Circuit Board View .....	9~10
Wiring Diagram .....	11
Replacement Parts List .....	12~15

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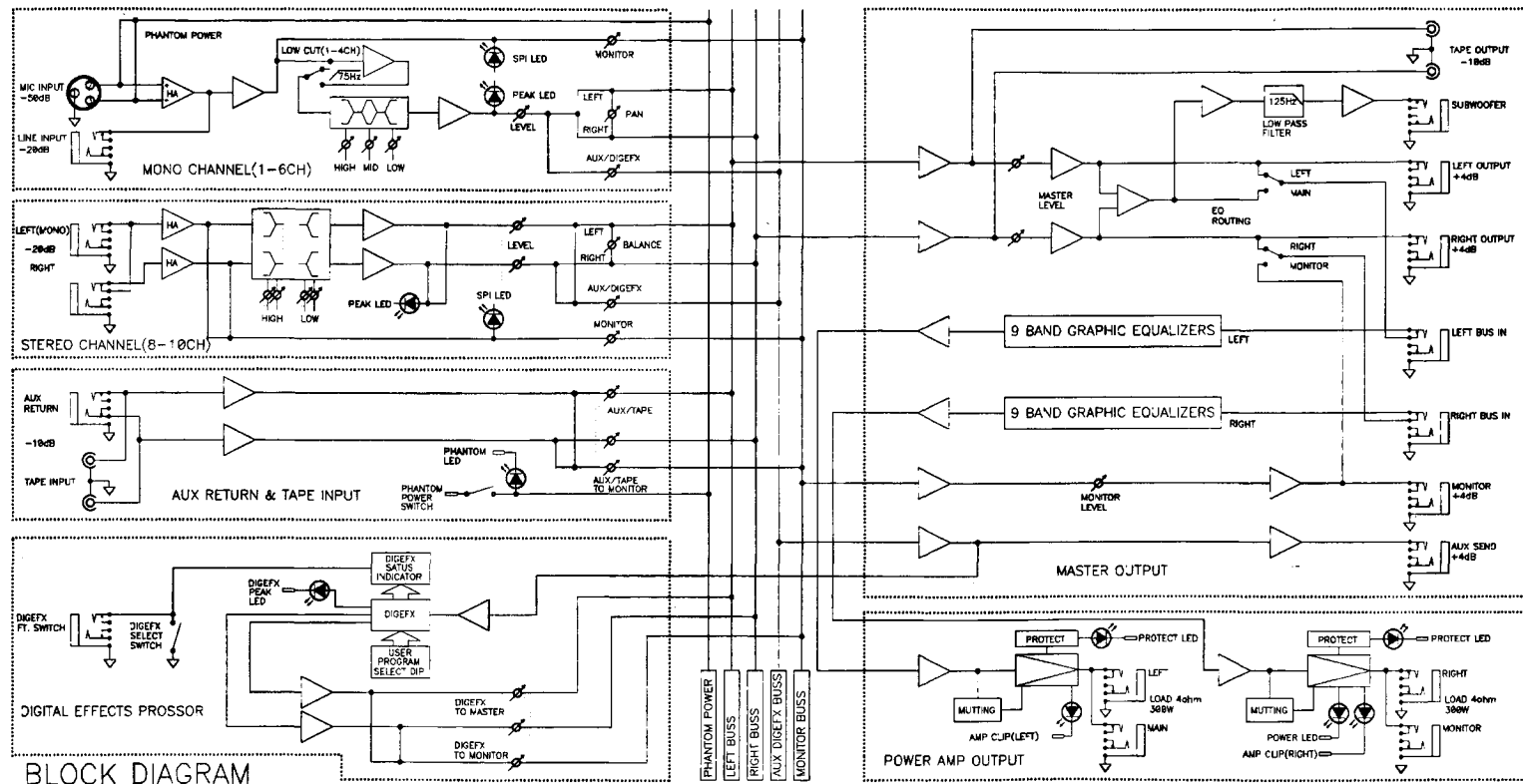
part number 6006 0004

## GENERAL SPECIFICATION

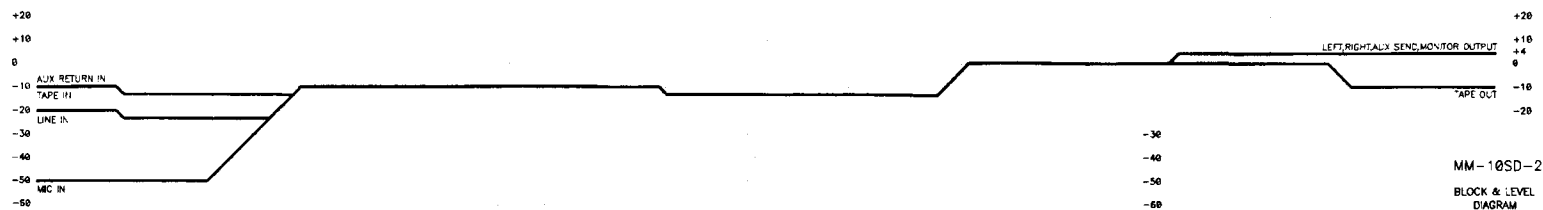
<b>MODEL</b>	MM10SD
<b>Power Output Level</b> f=1kHz, THD+N 0.1% RL 2Ω RL 4Ω RL 8Ω	450W×2 330W×2 200W×2
<b>Total Harmonic Distortion</b> f=1kHz, 300W output RL 4Ω 200W output RL 8Ω Main output +4dBm/600Ω	0.05% 0.05% 0.08%
<b>Frequency Response</b> 20Hz~20kHz, 8Ω, 1 watt CH IN to Main OUT @+4dBm	+1, -1dB +1, -1dB
<b>Hum and Noise</b> 20Hz~20kHz, Rs=150Ω	-110dB Equivalent input noise -70dB Residual output noise (SP OUT) -97dB Residual output noise (MAIN OUT)
<b>Cross Talk</b>	-70dB-80dB at 1kHz, Input to Output.
<b>Input sensitivity</b>	+4dBm (1.23V)
<b>Equalization</b> ± 15dB shelving ± 12dB peaking ± 15dB shelving	High : 12kHz Mid : 2.5kHz Low : 80Hz
<b>Graphic Equalization</b>	± 15dB maximum boost or cut in each of 2×nine bands. 63, 125, 250, 500, 1K, 2K, 4K, 8K, 16kHz : peaking.
<b>Protection circuit</b>	Short circuit current limit DC protection at speaker output Power ON/OFF transient AC line fuse.
<b>Input Impedance</b>	≥ 15kΩ
<b>Indicators</b>	Power (Green) Protect (Red) Clip (Amber) Phantom (Green)
<b>DC offset voltage</b>	≥ DC 10mV
<b>Clip LED Circuit</b>	Before clip at max output -3dB
<b>Dimension (W×D×H)</b>	470×390×240 mm 18.5×15.4×9.5 inch
<b>Weight</b>	45.1 lbs/ 20.5kg
<b>Power Consumption</b>	1000 Watts
<b>Connector</b>	Bal XLR input Bal 1/4" input 1/4" output

# Block Diagram

(MM10SD)

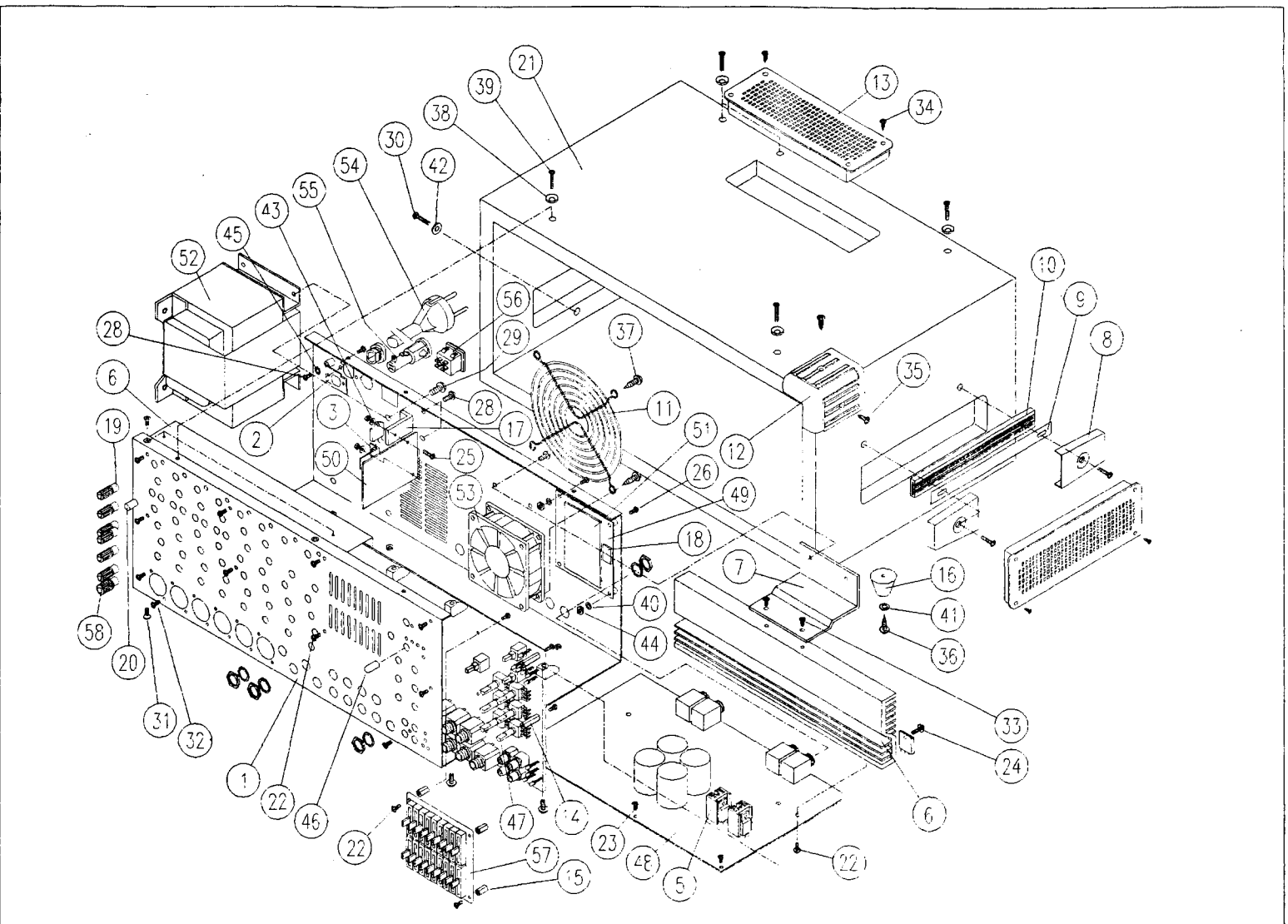


BLOCK DIAGRAM  
LEVEL DIAGRAM



MM-10SD-2  
BLOCK & LEVEL  
DIAGRAM

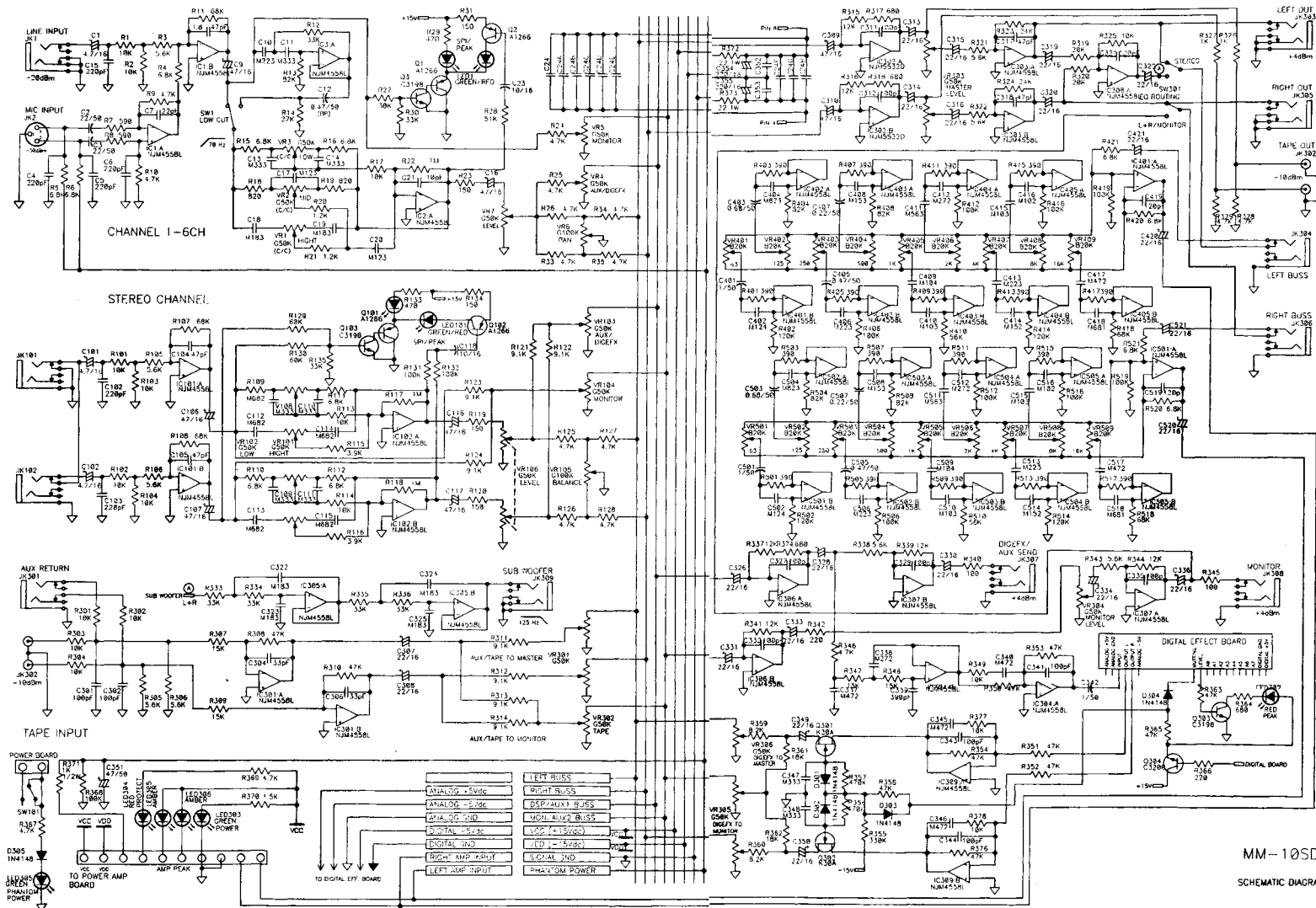
## (MM10SD)



ASSEMBLY PARTS (MM10SD)					
N0	DESCRIPTION	CODE NO	MATERIAL	SPECIFICATION	Q'TY
1	MAIN CHASSIS	375-00070	EGI(t=1.2)	430*176*253 (BK)	1
2	BRACKET CORD	351-00007	EGI(t=1.6)	30*22(BLACK ALUMITE)	1
3	BRACKET TRIAC PCB	351-00006	EGI(t=1.6)	12*12*26	1
4	CHASSIS SHIELD COVER	352-00100	EGI(G CORE)	275*183*33	1
5	HEAT SINK T.R	350-00130	AL EXT	15*11*22(L)	2
6	HEAT SINK MAIN	350-00100	AL EXT	290*80*20	1
7	HEAT SINK PLATE	350-00120	ALP(t=3.0)	80*67*40	1
8	HANDLE COVER	321-00010	EGI(t=1.0)	47*28*12 (BLACK)	1
9	HANDLE CORE	321-00010	SK-5(t=0.4)	215*18	1
10	HANDLE BELT	321-00010	VINYL CHLORIDE	220*25*6	1
11	FAN COVER	376*00020	METAL	80mm	1
12	CORNER DECORATION	360-00008	PP	49*49*68	8
13	VENTILATION COVER	321-00020	ABS	183*68*15	3
14	PCB SUPPORT	340-00014	MbsBe	6*6*24	8
15	PCB SUPPORT	340-00013	MbsBe	6*6*14.5	4
16	RUBBER FOOT	367-00024	RUBBER	ø22*16	4
17	HEAT SINK TRIAC	350-00015	AL EXT(t=5.0)	34*18*15	1
18	EVA SPONGE	365-00025	E.V.A(t=2.0)	10*20	2
19	CONTROL KNOB(S)	361-00150	ABS	ø9.5*23	46
20	PUSH S/W KNOB	313-00008	ABS	ø7.5*12 (BLACK)	7
21	WOODEN CASE ASS'Y	355-00015	PB	469-280-215(t=18)	1
22	MACHINE SCREW	362-00003		PH(+)*M3*8 (BK)	29
23	MACHINE SCREW	362-00035		PMW(+)*M3*6 (BK)	3
24	MACHINE SCREW	362-00036		PMSP(+)*M3*12 (BK)	12
25	MACHINE SCREW	362-00004		PH(+)*M3*16 (BK)	1
26	MACHINE SCREW	362-00062		PH(+)*M3*12 (BK)	4
27	MACHINE SCREW	362-00061		BH(+)*M4*8 (BK)	2
28	MACHINE SCREW	362-00005		PH(+)*M4*10 (BK)	2
29	MACHINE SCREW	362-00013		BH(+)*M5*12 (BK)	4
30	MACHINE SCREW	362-00056		BH(+)*M5*30 (BK)	2
31	TAPPING SCREW	362-00160		T2 FH(+)*3*6 (BK)	4
32	TAPPING SCREW	362-00027		T2 PH(+)*3*8 (BK)	23
33	TAPPING SCREW	362-00025		T2 PH(+)*4*8 (BK)	7
34	TAPPING SCREW	362-00140		T1 TH(+)*3*10 (BK)	12
35	TAPPING SCREW	362-00019		T1 TH(+)*4*10 (BK)	16
36	TAPPING SCREW	362-00021		T1 TH(+)*4*15 (BK)	4
37	TAPPING SCREW	362-00150		T1 TH(+)*5*12 (BK)	4
38	SPECIAL WASHER	351-00005		ø4 (BK)	10
39	MACHINE SCREW	362-00055		OH(+)*M4*25 (BK)	12
40	PLAIN WASHER	362-00038		ø3 (ZnW)	4
41	PLAIN WASHER	362-00039		ø4 (ZnW)	4
42	PLAIN WASHER	362-00047		ø5 (BK)	2
43	SPRING WASHER	362-00048		ø3 (ZnW)	6
44	NUT	362-00051		M3 (ZnW)	6
45	INTOOTH LOCK WASHER	362-00054		ø4 (ZnW)	1
46	TACT S/W KNOB	390-00010	RUBBER	ø6*15 (BLACK)	1
47	FRONT PCB	314-00140	FR-4	420*168.5*1.6t	1
48	MAIN PCB	314-00125	CEM-1	290*177*1.6t	1
49	DIGITAL PCB	314-00170	CEM-1	90*80*1.6t	1
50	TRIAC PCB	314-00046	CEM-1	50*70*1.6t	1
51	DELAY PCB	304-00004		RV-12(STK)	1
52	POWER TRANS	338-00090		PT-600W	1
53	DC FAN	373-00003		AD0812 HS-A70 GL	1
54	POWER CORD	337-00004		KKP-30 SJT 16	1
		337-00005		KP 4819D SVT 18	1
55	FUSE HOLDER	302-00005		DO345RA	1
56	POWER SWITCH	302-00003		H8660VB(BK)	1
57	EQ PCB	314-00115	CEM-1	83*168.5*1.6t	1
58	CONTROL KNOB(L)	361-00100	ABS	ø11*23	14
59	CARTON BOX	363-00170	DW-4	545*355*295	1
60	PACKING CORNER	364-00040	STYROFOAM	104*104*100 t=30	8
61	POLY BAG(SET)	365-00015	PE	450*850*0.07t	1
62	OWNER MANUAL	366-00140		BOOK	1
63	SERIAL NO. STICKER	366-00018	PAPER	34*24	2
64	SHIPPING LABEL	366-00027	PAPER	100*50	2

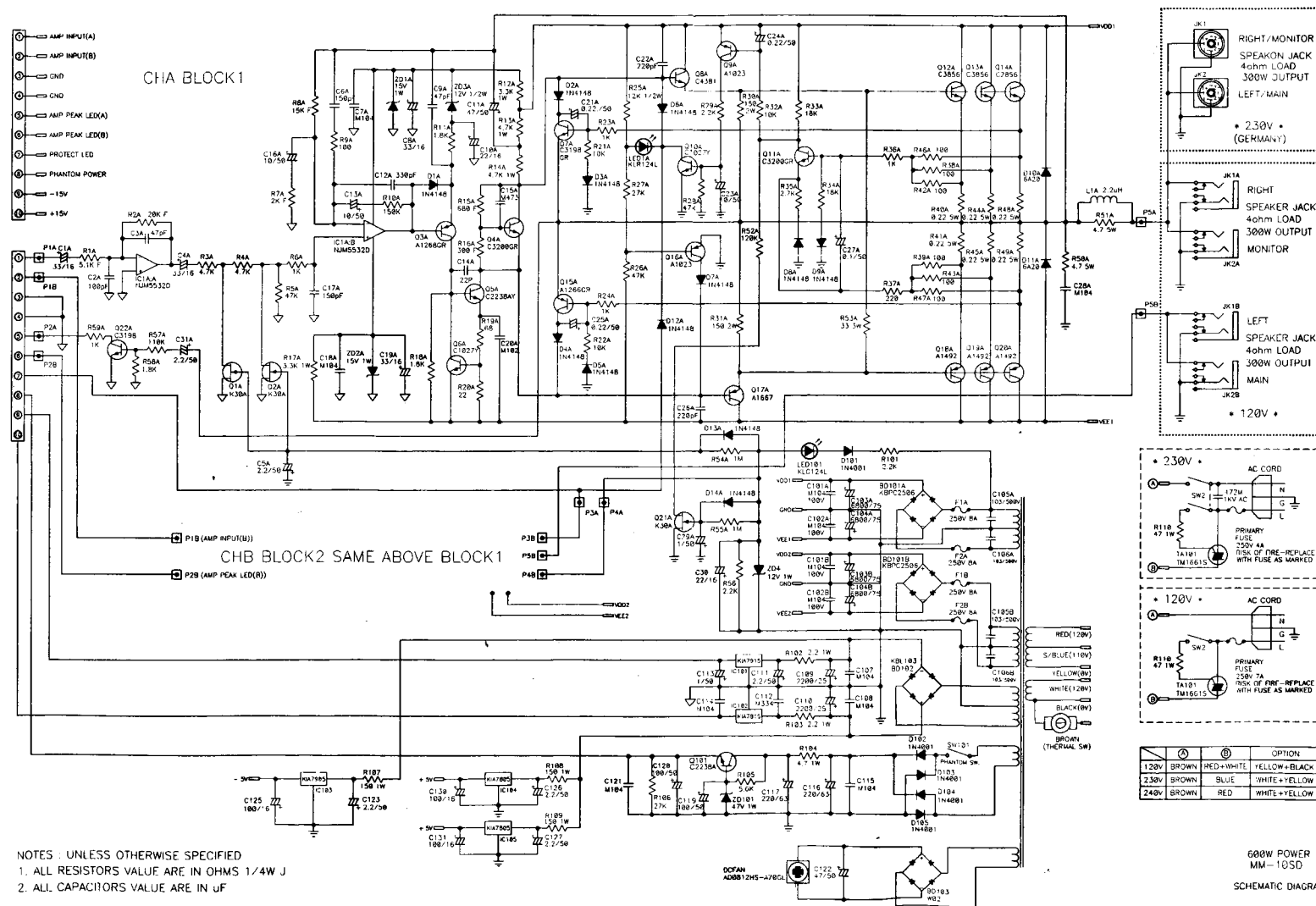
# Schematic Diagram

(MM10SD)

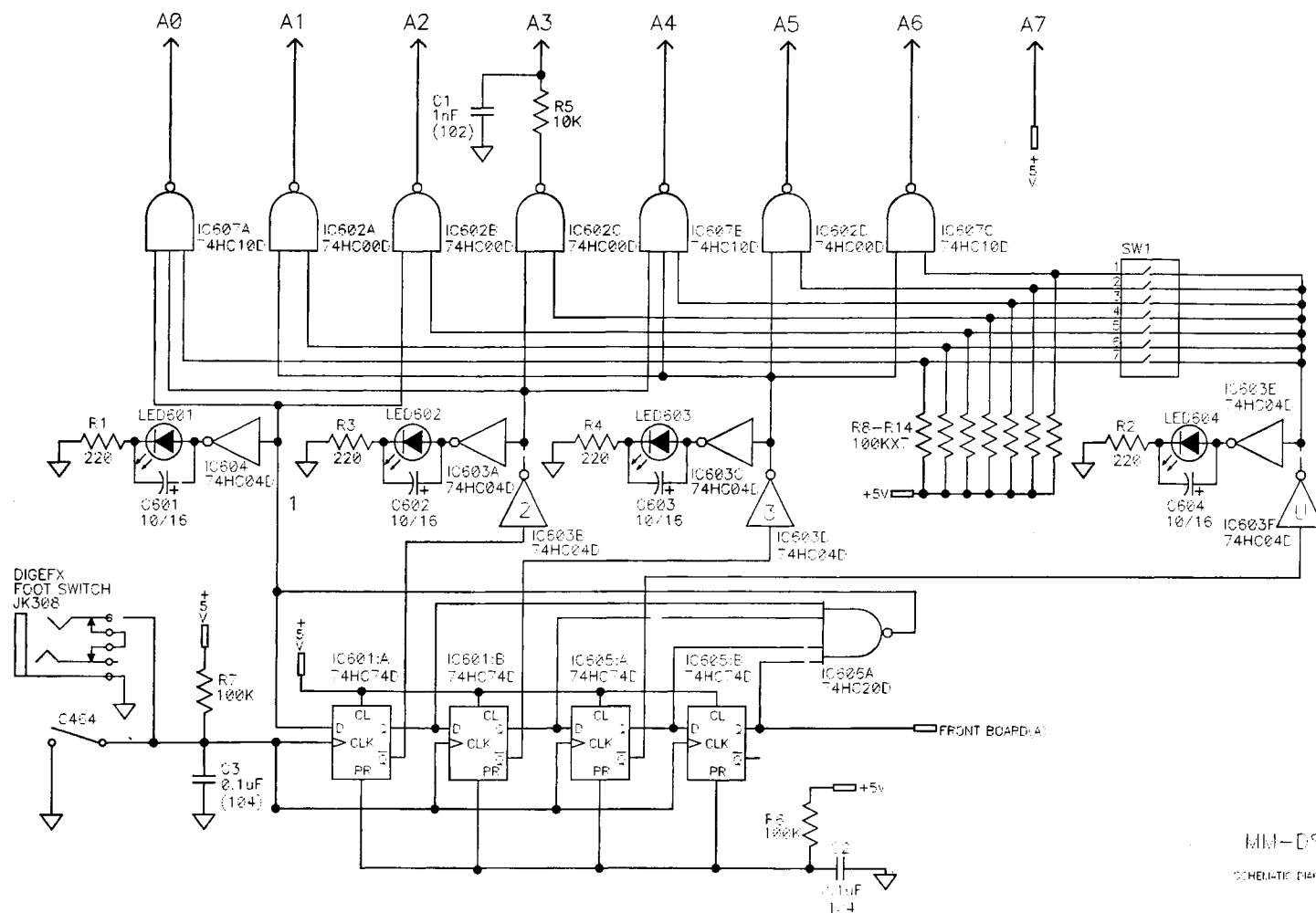


# Schematic Diagram

(MM10SD)



## (MM10SD)

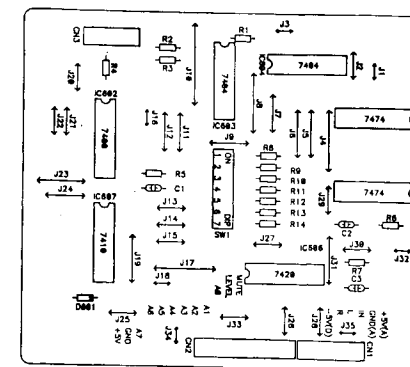
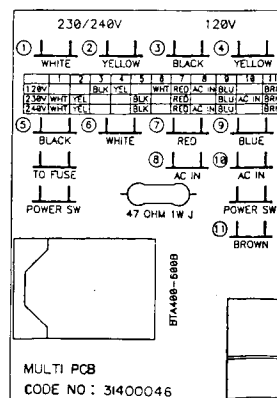
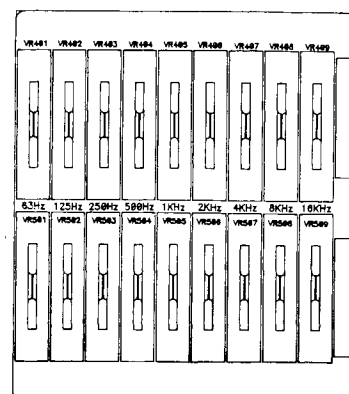
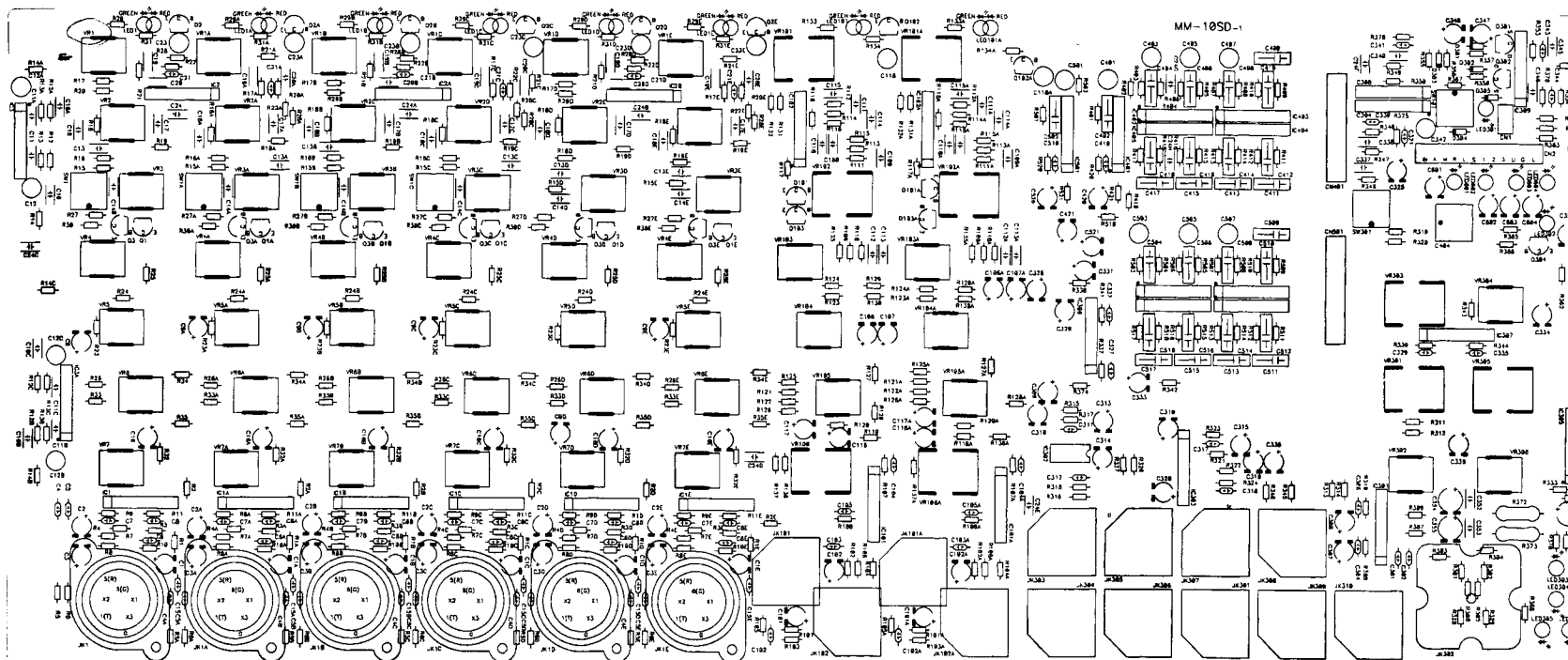


### MM-DSF

#### SCHEMATIC DIAGRAM

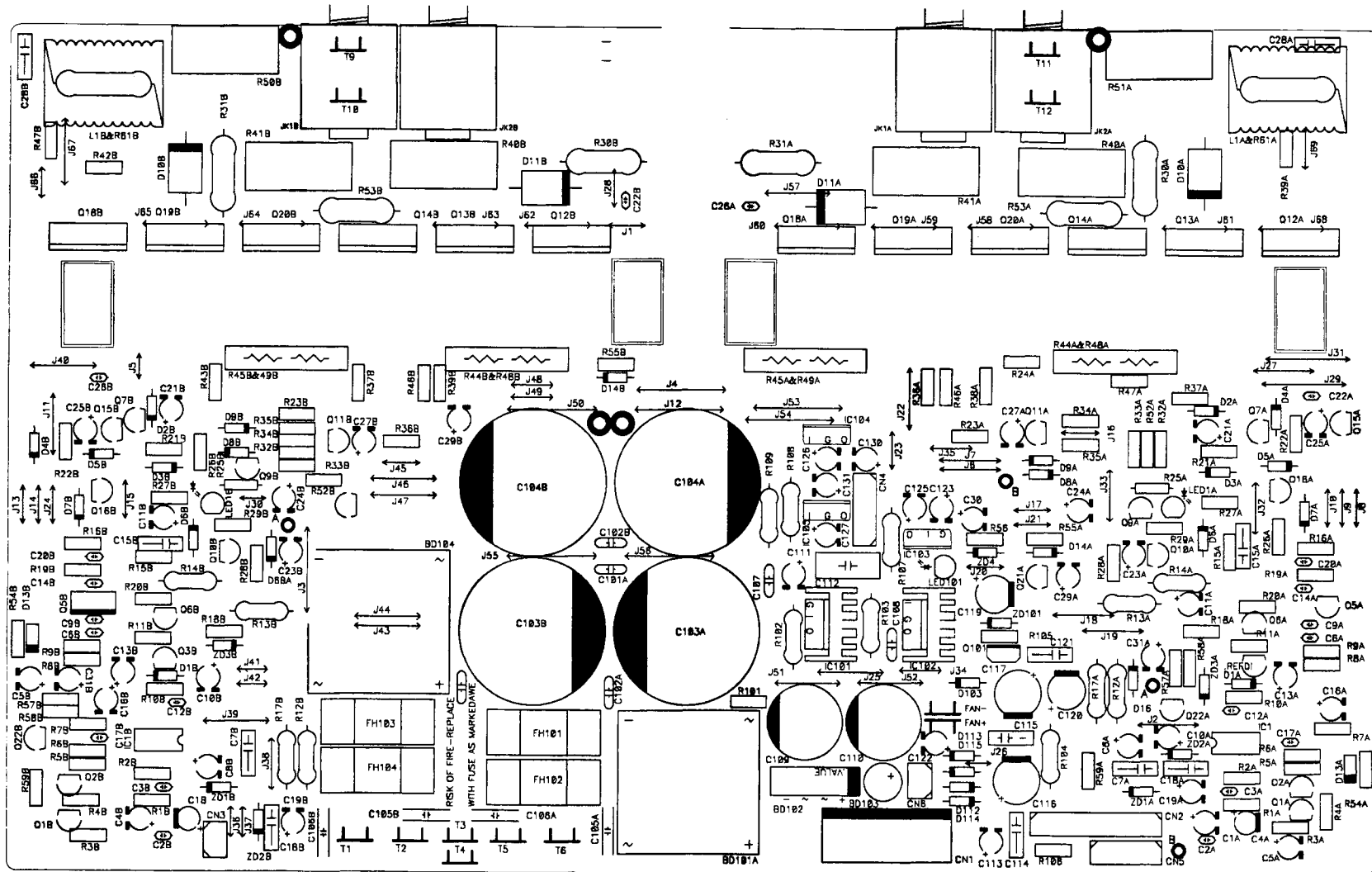


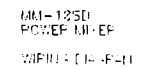
## (MM10SD)



# Printed Circuit Board View

(MM10SD)





**MM10SD**

Reference Designator	Part Number	Description	Specification
<b>Front PCB</b>			
MM10SD FRONT	N/A	P.C.B.	420 x 168.5 x 1.6t CEM-1
IC1,1A-1E,2,2A,2B,3,3A	30400012	I.C.	NJM4558L
IC101,101A,102,102A,301	30400013	I.C.	NJM4558L
IC303-309,401-405,501-505	30400014	I.C.	NJM4558L
IC302	30400001	I.C.	NJM5532D
Q304	30300024	Transistor	KTC 3198GR OR Y
Q3,3A-3E,103,103A,303	30300031	Transistor	KTA1266 GR
Q1,1A-1E,2,2A-2E,101	30310028	Transistor	TKC3200GR
Q101A,102,102A	30310029	Transistor	TKC3200GR
Q301,302	30330004	F.E.T. Transistor	KTK 30A GR
D301-305	31514148	DIODE(SW)	1N 4148
LED1,1A-1E,101,101A	31570014	L.E.D.	YLGR-503M
LED302,304	31570010	L.E.D.	KLR - 124L
LED301,303,601-604	31570006	L.E.D.	KLG - 124L
LED305,306	31570013	L.E.D.	KLA - 124L
VR1,1A-1E,2,2A-2E,3	30710607	VR. ROTARY	9mm(G50K C/C)
3A-3E	30710607	VR. ROTARY	9mm(G50K C/C)
VR4,4A-4E,5,5A-5E,7	30710608	VR. ROTARY	9mm(G50K)
VR7A-7E,103,103A,104	30710608	VR. ROTARY	9mm(G50K)
VR104A,302,304,306	30710608	VR. ROTARY	9mm(G50K)
VR101,101A,102,102A	30710022	VR. ROTARY	9mm(G100K C/C)
VR106,106A,310,303,305	30710023	VR. ROTARY	12mm(G50K C/C)
VR6,6A-6E,105,105A	30710024	VR. ROTARY	12mm(G50K)
JK101,101A,102,102A,301	31060009	JACK.PHONE	VPJ - 06
JK303-310	31060009	JACK.PHONE	VPJ - 07
JK302	31020001	JACK.RCA	JK 0400571N
JK1,1A-1E	31070001	JACK.COMBINATION	CXLF- 02
SW1,1A-1C,101	31400015	SW . PUSH	JPV B - 2202S -C1(N/S)
SW301	31400016	SW . PUSH	SPEC-122SC021
C464	31400017	SW. TACT	KPT-1106A
R340,345	30190001	Resistor CF	100 OHM 1/6W J
R25A,25B	30110002	Resistor CF	1 KOHM 1/2W J
R102,103	34600295	Resistor METAL	22 OHM 1W J
C21A,21B,24A,24B,25A	30210011	Capacitor ELE	4.7 uF 16V
C25B	30210011	Capacitor ELE	4.7 uF 16V
C13A,13B,16A,16B,23A	30210042	Capacitor ELE	10 uF 16V
C23B	30210042	Capacitor ELE	10 uF 16V
C10A,10B,30	30210045	Capacitor ELE	22 uF 16V
C11A,11B,122	30210041	Capacitor ELE	47 uF 50V
C116,117	30210006	Capacitor ELE	220 uF 16V
C407,507	30210033	Capacitor ELE	0.22 uF 50V B.P
C12,12A-12C,405,505	30210028	Capacitor ELE	0.47 uF 50V B.P
C403,503	30210035	Capacitor ELE	0.68 uF 50V B.P
C341,401,501	30210009	Capacitor ELE	1 uF 50V B.P
C23,23A-23E,118,118A	30210020	Capacitor ELE	10 uF 16V B.P
C2,2A-2E,3,3A-3E	30210012	Capacitor ELE	22 uF 50V B.P
C345,346,416,516	30230029	Capacitor MYLAR	M102 100V J
C343,344,414,514,	30230032	Capacitor MYLAR	M152 100V J
C338,412,512	30230009	Capacitor MYLAR	M272 100V J
C337,417,517	30230011	Capacitor MYLAR	M472 100V J
C410,415,510,515	30230007	Capacitor MYLAR	M103 100V J
C17,17A-17E,20,20A-20E	30230040	Capacitor MYLAR	M123 100V J

**MM10SD**

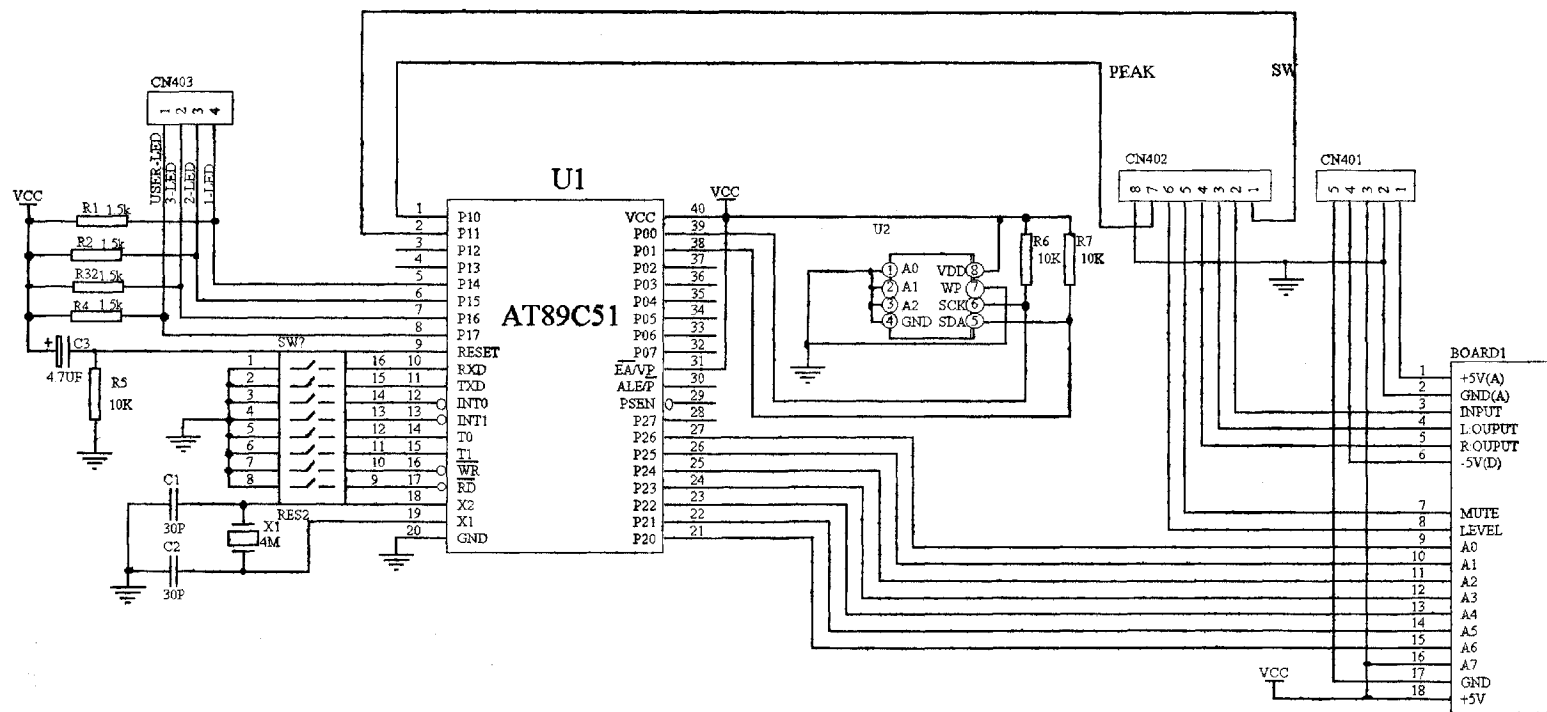
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C405,505	30230041	Capacitor MYLAR	M153 100V J
C18,18A-18E,19,19A-19E	30230042	Capacitor MYLAR	M183 100V J
C322-325	30230042	Capacitor MYLAR	M183 100V J
C10,10A-10C,406,506,41B	30230061	Capacitor MYLAR	M223 100V J
C51B	30230061	Capacitor MYLAR	M223 100V J
C11,11A-11C,13,13A-13E	30230010	Capacitor MYLAR	M333 100V J
C14,14A-14E,108-111	30230010	Capacitor MYLAR	M333 100V J
C108A-111A,347,348	30230010	Capacitor MYLAR	M333 100V J
C411,511	30230046	Capacitor MYLAR	M563 100V J
C404,504	30230050	Capacitor MYLAR	M823 100V J
C24,24A-24H,352,353,409	30230014	Capacitor MYLAR	M104 100V J
C509	30230014	Capacitor MYLAR	M104 100V J
C402,502	30230051	Capacitor MYLAR	M124 100V J
C418,518	30230067	Capacitor MYLAR	M 681 100V J
C112-115,112A-115A	30230038	Capacitor MYLAR	M 682 100V J
C21,21A-21E	30200015	Capacitor CERAMIC	10pF 50V J
C7,7A-7E	30200029	Capacitor CERAMIC	22pF 50V J
C8,8A-8E,104,105,104A	30200037	Capacitor CERAMIC	47pF 50V J
C105A,317,318	30200037	Capacitor CERAMIC	47pF 50V J
C301,302,311,312,321,327	30200030	Capacitor CERAMIC	100pF 50V J
C329,332,335	30200030	Capacitor CERAMIC	100pF 50V J
C4,4A-4E,5,5A-5E,6,6A-6E	30200032	Capacitor CERAMIC	220pF 50V J
C15,15A-15E,102,102A	30200032	Capacitor CERAMIC	220pF 50V J
C103,103A	30200032	Capacitor CERAMIC	220pF 50V J
C304,306	30200017	Capacitor CERAMIC	330pF 50V J
C419,519	30200044	Capacitor CERAMIC	120pF 50V J
C339	30200040	Capacitor CERAMIC	390pF 50V J
C341	30200043	Capacitor CERAMIC	470pF 50V J
<b>Power Supply</b>			
MM102D STEREO PWR	N/A	P.C.B.	290 X 177X1.6t CEM-1
IC1,1B	30400001	I.C.	NJM5532D
IC102	30430006	I.C.	NJM 7815FA
IC101	30430009	I.C.	NJM 7915FA
Q3A,3B	30300002	Transistor	KTA 1268 GR
Q9,9B,16A,16B	30310029	Transistor	KTA 1023 Y
Q18A-20A,18B-20B	30230002	Transistor	2SA 1492 Y
Q17A,17B	30310006	Transistor	2SA 1667 Y
Q15A,15B	30300001	Transistor	2SA 1266 Y
Q4A,4B,11A,11B	30300018	Transistor	2SC 3200 GR
Q6A,6B,10A,10B	30310025	Transistor	2SC 1027 Y
Q12A-14A,12B-14B	30230003	Transistor	2SC 3856 Y
Q8A,Q8B	30230008	Transistor	2SC 4381 Y
Q5A,5B,101	30310026	Transistor	2SC 2238 AY
Q7A,7B,22A,22B	30300036	Transistor	2SC 3198Y GR
Q1A,1B,2A,2B,21A,21B	30330005	FET Transistor	2SK 30A GR
LED1A,1B	31570010	L.E.D.	KLR 124L
LED101	31570006	L.E.D.	KLK 124L
D1A-9A,1B-9B,13A,13B	31514148	DIODE SW.	1N 4148
D14A,14B,6BA,16	31514148	DIODE SW.	1N 4148
D103,111-115	31500008	DIODE (R)	1N 4001
D10A,10B,11A,11B	31500009	DIODE (R)	6A 200V
ZD3A,3B	31520002	DIODE (Z)	12V 0.5W

**MM10SD**

Reference Designator	Part Number	Description	Specification
ZD4	31521000	DIODE (Z)	12V 1W
ZD1A,1B,2A,2B	31521001	DIODE (Z)	15V 1W
ZD101	31521005	DIODE (Z)	47V 1W
BD102	31520012	DIODE (B)	KBL103
BD101A,104	31500014	DIODE (B)	KBPC2506
BD103	31500015	DIODE (B)	W02
	30490002	I.C SOCKET	8 PIN
R44A&48A,44B&48B	30135005	Resistor CEMENT	0.22 OHM 5W J X 2
R45A&49A,45B&49B	30135005	Resistor CEMENT	0.22 OHM 5W J X 2
R40A,40B,41A,41B	30135003	Resistor CEMENT	0.22 OHM 5W J
R50B,51A,61A,61B	30135004	Resistor CEMENT	4.7 OHM 5W J
R53A,53B	30130000	Resistor METAL	33 OHM 3W J
R30A,30B,31A,31B	30120010	Resistor METAL	150 OHM 2W J
R102,103	30115006	Resistor METAL	2.2 OHM 1W J
R25A,25B	30110011	Resistor CF	12 KOHM 1/2W J
R16A,16B	30105094	Resistor MF	300 OHM 1/4W F
R20A,20B	30105064	Resistor CF	22 OHM 1/4W J
C27A,27B	30210065	Capacitor ELE	0.1 uF 50V
C21A,21B,24A,24B,25A	30210033	Capacitor ELE	0.22 uF 50V
C25B	30210033	Capacitor ELE	0.22 uF 50V
C29A,29B,113	30210009	Capacitor ELE	1 uF 50V
C5A,5B,31A,31B,111,123	30210030	Capacitor ELE	2.2 uF 50V
C126,127	30210030	Capacitor ELE	2.2 uF 50V
C13A,13B,16A,16B,23A	30210042	Capacitor ELE	10 uF 50V
C23B	30210042	Capacitor ELE	10 uF 50V
C10A,10B,30	30210022	Capacitor ELE	22 uF 16V
C1A,1B,4A,4B,8A,8B,19A	30210040	Capacitor ELE	33 uF 16V
C19B	30210040	Capacitor ELE	33 uF 16V
C11A,11B,122	30210041	Capacitor ELE	47 uF 50V
C119,120	30210066	Capacitor ELE	100 uF 50V
C116,117	30210067	Capacitor ELE	220 uF 63V
C109,110	30210005	Capacitor ELE	2200 uF 25V
C103A,103B,104A,104B	30210068	Capacitor ELE	6800 uF 75V
C20A,20B	30230029	Capacitor MYLAR	M102 100V J
C15A,15B	30230015	Capacitor MYLAR	M473 100V J
C7A,7B,18A,18B,28A,28B	30230009	Capacitor MYLAR	M104 100V J
C101A,101B,102A,102B	30230009	Capacitor MYLAR	M104 100V J
C107,108,114,115,121	30230009	Capacitor MYLAR	M104 100V J
C112	30230056	Capacitor MYLAR	M334 100V J
C3A,3B,9A,9B	30200037	Capacitor CERAMIC	47pF 50V J CH
C14A,14B	30200029	Capacitor CERAMIC	22pF 50V J CH
C2A,2B	30200014	Capacitor CERAMIC	100pF 50V J CH
C6A,6B,17A,17B	30200010	Capacitor CERAMIC	150pF 50V J CH
C22A,22B,26A,26B	30200032	Capacitor CERAMIC	220pF 50V J CH
C12A,12B	30200017	Capacitor CERAMIC	330pF 50V J CH
C105A,105B,106A,106B	30230068	Capacitor CERAMIC	0.01uF 500V J CH
	30800003	FUSE	51SB 250V 8A
FH101-104	31160001	INDUCTOR COIL	2.2uH
<b>EQ PCB</b>			
MM10SD EQ	N/A	P.C.B	83 x 168.5 x 1.6t CEM-1
VR401-409	30700012	VR.SLIDE	PS2003N-B20K-C.C-10S

**MM10SD**

Reference Designator	Part Number	Description	Specification
<b>Triac</b>			
MM10SD TRIAC	N/A	P.C.B	50 x 70 x 1.6t CEM-1
VR401-409	10640000	TRIAC	TM1661S-L
	30115001	Resistor METAL	47 OHM 1W J
<b>DigiEFX</b>			
MM10SD DIGITAL	N/A	P.C.B	90 x 80 x 1.6t CEM-1
MM10SD RV-12	N/A	P.C.B	RV-12(STK)
IC602	30420005	Digital I.C.	74HC00D
IC603,604	30420006	Digital I.C.	74HC04D
IC607	30420007	Digital I.C.	74HC10D
IC601,605	30420008	Digital I.C.	74HC74D
IC606	30420009	Digital I.C.	74HC20D
D601	31514148	DIODE(SW)	1N4148
SW1	31490000	SW.DIP	7PIN
R1-4	30190002	Resistor MF	220 OHM 1/6W J
C1	30200031	Capacitor CERAMIC	1nF(102) 50V J
C2,3	30200045	Capacitor CERAMIC	0.1uF(104) 50V J
<b>Chassis</b>			
	31110035	POWER TRANS	PT-600W
	31440002	SW.POWER	H8660VB(BK)
	30890006	FUSE HOLDER	DO345RA
	30800002	FUSE	61M 250V 7A
	14900001	REVERB TANK	BSN2FB1E/T
	10520001	DC FAN	AD0812HS-A70
SAA	31200009	POWER CORD	KKP - 550A
UK	31200010	POWER CORD	GS - 302 - 75 3C/0.75mm 6FT
VDE/SFDN	31200011	POWER CORD	KKP - 4819D
SWISS	31200012	POWER CORD	LP37H03VV - F 3C/0.75mm 6FT
JIS	31200013	POWER CORD	LP12SPT - 2 2C/18AWG 6FT
UL	31200014	POWER CORD	KKP - 30A
CSA	31200015	POWER CORD	KKP - 30 B
KS	31200007	POWER CORD	KKP 30 SJT 16
KS	31200008	POWER CORD	KKP 4819D SVT 18
VDE/SFDN/CENE/SW/UK	31210004	CORD STOPPER	SR - 6W - 1
JIS/KEMA	31210005	CORD STOPPER	SR - 4N - 4
CSA	31210006	CORD STOPPER	SR - 6N3 - 4
UL	31210007	CORD STOPPER	SR - 5N - 4



**DIGITAL EFFECT BOARD**